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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/751,610	12/29/2000	William A. Harris	H16-26054 US	8597

128 7590 11/29/2004

HONEYWELL INTERNATIONAL INC.
101 COLUMBIA ROAD
P O BOX 2245
MORRISTOWN, NJ 07962-2245

EXAMINER	
LAM, TUAN THIEU	
ART UNIT	PAPER NUMBER
2816	

DATE MAILED: 11/29/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/751,610	HARRIS, WILLIAM A.	
	Examiner	Art Unit	
	Tuan T. Lam	2816	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *10 September 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-3,20-24,26-29,31-37,39-45,47 and 48* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-3,20-24,26-29,31-37,39-45,47 and 48* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *02 December 2002* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

This is a response to the appeal brief filed 9/10/2004. Claims 1-3, 20-24, 26-29, 31-37, 39-45 and 47-48 are pending and are under examination. The finality of the Office action on 4/7/2004 has been withdrawn. Claims 1-3, 20-24, 26-29, 31-37, 39-45 and 47-48 are rejected in view of new grounds of rejection as follows:

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-3, 20-24, 26-29, 31-37, 39-45 and 47-48 are rejected under 35USC 103(a) as being unpatentable over Li (USP 5,058,132) in view of Epstein (USP 4,093,870), both prior art of record, and Mano (Computer Engineering Hardware Design, 1988, pages 130-132), newly cited reference.

Figure 2 of Li shows a circuit for dividing an input clock signal into N clock signals having a relative phase separating of 360/2N, where N (N is 5, column 5, lines 50-64) is a positive integer, the circuit comprising: a phase locked loop (102) receiving an input signal (116) having a frequency F0 (125 Mhz) and providing an output signal ((signal 124 having a signal of 2NF0 = 12.5 Mhz) having a frequency of 2NF0, a Johnson counter (114) having N stages (5 flip flops, column 5, lines 50-64) connected to receive as an input the output signal (124) of the phase locked loop circuit (102) and providing an output signal (LBC1-5) as an error signal to the phase locked loop circuit (column 5, lines 25-28), and the Johnson counter (114), having at least

5 flip flop circuits (stages), also connected for providing at least two output signals (LBC1-5) from at least two of the N stages of the Johnson counter (114) as clock signals each having a phase displaced from the phase of the other 360/2N degrees.

Li reference does not disclose the Johnson counter (114) having N JK flip flops with the particular arrangement as called for in claims 1, 20, 32 and 40. Epstein's figure 4 discloses a Johnson counter using JK flip flops with a particular arrangement as claimed. Mano's reference further teaches that JK flip flop is reliable because it does not have the undermined states (page 131, third paragraph). Therefore, it would have been obvious to a person skilled in the art at the time the invention was made to implement the 5 stages (flip flop circuits) Johnson counter of Li with a five JK flip flop circuit arranged as in Epstein because JK flip flop is reliable thus preventing the counter from erroneous operation as taught by Mano.

Regarding claims 2-3, 21, 33-34, 41-42 and 48, the combination of Li, Epstein and Mano references discloses N is 5. However, depending on the frequency of the input signal, the output frequency of the VCO can be divided up to down (N =4 required in claims 2, 21, 33 and 41; N =8 required in claims 3, 34, 42 and 48) to be in synchronized with the input signal without changing the overall operation of the circuit. Thus, the dividend factor N is a design expedient dependent on the particular application. Therefore, the limitation of using N equals 4 or 8 as recited in claims 2, 21 and 3 will not be patentable under 35USC 103(a).

Regarding claim 22, each signal LBC1-5 has a frequency of 2NF0.

Regarding claims 23 and 35-36, the error signal (output of the VCO of Li) has a frequency equal to F0.

Regarding claims 24, 29, 37 and 45, Li shows a phase detection (104), low pass filter and gain stage (106) and VCO (108).

Regarding claims 26, 31, 39 and 47, each Q output and complementary Q output of each JK flip flop is coupled to provide a clock signal, the 2N clock signals having relative phase separation of 360/2N degree, and each clock signal having a frequency F0.

Regarding claims 27 and 43-44, the feedback signal is seen as the feedback in (123) of Li reference.

Regarding claim 28, each clock output has a frequency F0.

Conclusion

2. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tuan T. Lam whose telephone number is 571-272-1744. The examiner can normally be reached on Monday to Friday (7:30 am to 6:00pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, TIMOTHY P CALLAHAN can be reached on 571-272-1740. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Tuan T. Lam
Primary Examiner
Art Unit 2816

11/21/2004